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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,270	09/26/2001	Michael A. Guillorn	UBAT:033US/JJB	9947

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EXAMINER

QUARTERMAN, KEVIN J

ART UNIT PAPER NUMBER

2879

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,270

Applicant(s)

GUILLORN ET AL.

Examiner

Kevin Quarterman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-17, drawn to a method of manufacturing, classified in class 445, subclass 23.
 - II. Claims 18-38, drawn to an apparatus, classified in class 313, subclass 311.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the apparatus can be made by forming an electrically conductive interconnect on at least part of an insulating surface of a substrate and growing at least one fiber that is coupled to the electrically conductive interconnect by sputtering, instead of by DC plasma enhanced chemical vapor deposition.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Mr. John Bruckner on 30 December 2003 a provisional election was made with traverse to prosecute the invention of Group II, claims 18-38. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-17 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Reference sign "430" of Figure 4 is not mentioned in the written description. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid

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abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 18-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Eldridge (US 6110823).

11. Regarding independent claims 18-19, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. If the product in the product-by-process claim is the same as the product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP § 2113 [R-1]).

12. Regarding independent claim 20, Figure 5B of Eldridge shows an apparatus comprising an electrically conductive interconnect (512) formed on at least a part of an insulating surface of a substrate (508) and at least one fiber (502) coupled to the electrically conductive interconnect.

13. Regarding claim 21, Eldridge discloses the at least one fiber including at least one carbon nanofiber (col. 121, ln. 55-56).

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14. Regarding claim 22, Eldridge shows in several views of the drawings—e.g.

Figure 4—the at least one carbon nanofiber including a plurality of substantially vertically aligned carbon nanofibers.

15. Regarding claim 23, Eldridge discloses a catalyst coupled to the at least one fiber (col. 32, ln. 33-35).

16. Regarding claim 24, Eldridge discloses the catalyst including at least one metal selected from the group consisting of nickel, iron, and cobalt (col. 32, ln. 33-35).

17. Regarding claim 25, Eldridge discloses the substrate including at least one member selected from the group consisting of silicon, quartz, sapphire and magnesia (col. 22, ln. 52-55).

18. Regarding claim 26, Eldridge discloses the substrate being optically transmissive (col. 22, ln. 52-55).

19. Regarding claim 27, Eldridge discloses the electrically conductive interconnect including at least one refractory metal selected from the group consisting of W, Mo, Ta, and Nb (col. 76, ln. 16-18).

20. Regarding claim 28, Figure 1E of Eldridge shows an electrochemical passivator (124) coupled to at least one member selected from the group consisting of at a portion of a surface of the electrically conductive interconnect and at least a portion of a surface of the at least one fiber.

21. Regarding claim 29, Eldridge discloses the electrochemical passivator including a dielectric layer including at least one member selected from the group consisting of SiO_2 , Si_3N_4 and a polymer (col. 27-28).

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22. Regarding claim 30, Figure 5B of Eldridge shows a tip of the at least one fiber being not passivated.

23. Regarding claim 31, Figure 5B of Eldridge shows a buffer layer (502a) between the at least one fiber and the electrically conductive interconnect.

24. Regarding claim 32, Eldridge discloses the buffer including at least one substance selected from the group consisting of Ti, W, Mo, and titanium nitride (col. 76, ln. 16-18).

25. Regarding claim 33, Figure 7 of Eldridge shows that the plurality of fibers is individually electrically addressable via the electrically conductive interconnect.

26. Regarding claim 34, Figure 16 of Eldridge shows parallel leads for active capacitance cancellation coupled to the electrically conductive interconnect.

27. Regarding claims 35-36, the recitations "a biosensor" and "a field-emitting array" have not been given patentable weight because the recitation occurs in the preamble.

A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

28. Regarding independent claim 37, Eldridge discloses a kit comprising an electrically conductive interconnect (512) formed on at least a part of an insulating

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surface of a substrate (508) and at least one fiber (502) coupled to the electrically conductive interconnect.

29. Regarding claim 38, Eldridge discloses the kit comprising instructions (col. 134, ln. 34).

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eldridge (US 6336269) discloses a method of fabricating an interconnection element. Khandros (US 5806181) discloses contact carriers for populating larger substrates with spring contacts.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kevin Quarterman
Examiner
Art Unit 2879

kq *Na*
December 30, 2003



Nimesh Patel
Supervisory Patent Examiner
Art Unit 2879